Public Page for Quarter Ending November 30, 2007

Consolidated Program for Research and Development for Welding of High Strength Steel Pipelines, #277 & 278

Project 278: Development of Optimized Welding Solutions For X100 Line Pipe Steel

Background

To meet the increasing demand for energy in North America, oil and gas reserves in more remote and challenging regions are being developed where large volumes of natural gas will be transported by new long distance, high pressure transmission pipelines. Advanced pipeline designs utilizing high strength line pipe is a key element in meeting these increasing energy demands. A significant amount of laboratory research has been conducted on the development of X100 line pipe and associated welding technology; including, a few recent demonstration projects of limited size and scope. Accordingly, there are few welding process options proven for X100 and the knowledge resides within a small number of companies. The objectives of the proposed work are to establish the range of viable welding options for X100 line pipe, define essential variables to provide for welding process control that ensures reliable and consistent mechanical performance, validate the new essential variables methodology for relevant field welding conditions, and verify weldment performance through a combination of small and large scale tests. Full implementation will be achieved through changes to applicable codes and standards.

Progress in the Quarter

Project activities undertaken through the first quarter focused on (1) Project Kick-Off; (2) State of the Art Review; and (3) Identification of Essential Variables.

The project kick-off meeting was held on October 16, 2007, in Atlanta. The project team reviewed and revised the project plan. A near-term action plan was formulated. Two more web-conferences were held following the kick-off meeting to review the progress on the near-term action plan. The possible sources of linepipes for specimen fabrication were discussed at those conferences. The project team is following up with those sources.

The work to develop the gap analysis for the welding of high strength steel pipelines has begun and the estimated completion date is May 31, 2008. The review was started late in the quarter and thus is still in the early stages and there is little progress to report. Additionally, the preliminary design of thermal measurements for plate-welding have been made, detailed design of thermocouple installation and instrumentation will be considered when the welding procedure, welding parameters, and weld geometry design are finalized.